REMARKS/ARGUMENTS

Rejection of claims 1-6 under 35 U.S.C. 103(a) as being unpatentable over Yang (US 6,709,883) in view of Chen et al. (US 6,522,063):

The Examiner states in the rejection of claims 1-6 that, although Yang fails to disclose that the amorphous interface layer 14 is conductive, Chen et al. (henceforth referred to as Chen) discloses the light emitting diode using a conductive transparent material layer 116 or 218 as an amorphous interface layer, and that it would have been obvious to one having ordinary skill in the art at the time the invention was made to choose conductive transparent material because the conductive transparent material would increase adhesion, provide good ohmic contact, low sheet resistance, low contact resistance, and high optical transparency (refer to Feb. 1, 2005 Office action page 3, lines 4-11). The applicant respectfully disagrees and provides arguments below.

Neither Chen nor Yang teaches or suggests that making a material (the interface layer, in particular) conductive will increase its adhesive properties. Neither Chen nor Yang teaches or suggests that making such material conductive will increase its optical transparency. The Examiner has not indicated a basis for these motivations. That is to say, how would making Yang's amorphous interface layer 14 conductive provide increased adhesion or transparency? The applicant contends that since these properties are independent, making Yang's amorphous interface layer 14 conductive cannot be reasonably motivated by a desire to increase adhesion or transparency.

Regarding the other motivation mentioned by the Examiner, clearly a conductive material can have lower sheet/contact resistance, and provide better ohmic contact. Making the amorphous layer conductive would be tantamount to having the current pass through the crystal substrate (which is also conductive). But there is no reason that the current should flow through the crystal substrate. In fact, Yang even states that no current flows through

the crystal substrate (col. 3, lines 56-61). In Yang's embodiment current flows directly from the electrode to the ohmic contact layer and into the semiconductor layers. Therefore, making the amorphous layer conductive would be redundant, if not useless, given that the ohmic contact layer is already provided to carry theelectrical current.

A part of the novelty of the claimed invention comes in that making the amorphous layer conductive leads to an unobvious and unexpected result: it allows for the removal of a portion of the ohmic contact layer altogether. This goes against Chen, who teaches that the ohmic layer is necessary to increase ohmic contact and adhesion (Examiner's statement of motivation). That is, Chen does not suggest removal of any ohmic contact layer material since this would reduce ohmic contact and adhesion. Similarly, Yang also does not suggest this.

Given the lack of motivation, as well as the unexpected result of the claimed invention, the applicant argues that the combination of Yang and Chen is made in hindsight. A person of ordinary skill in the art would have no motivation to create the claimed invention based on Yang and Chen's disclosures. Therefore, the claimed invention is novel and unobvious over the cited art.

Addition of claim 7:

Claim 7 is added to further illustrate the novelty of the claimed invention. The extra step of the method is taken directly from the specification (paragraph 0019 lines 17-22, Fig. 1; for example), and further specifies a difference between the claimed invention and the prior art. If the Examiner finds claim 1 acceptable, it is believed that claim 7, which depends on claim 1, is also acceptable.

Applicant respectfully requests that the rejections be withdrawn and a Notice of Allowance be issued for this application.

Respectfully submitted,

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